



## Chapter Warm-Up

Prerequisite Problem Type	For Section	Answer	Section for Review
If $f(x) = \frac{x^2 - x - 6}{x + 2}$ , then find: (a) $f(-2.1)$ (b) $f(-2)$	<b>9.1–9.9</b>	(a) -5.1    (b) undefined	1.2 Function notation
Let $f(x) = \begin{cases} x^2 + 1 & \text{if } x \leq 1 \\ x + 2 & \text{if } x > 1 \end{cases}$ , find: (a) $f(0.99)$ (b) $f(1.01)$	<b>9.1</b>	(a) 1.9801    (b) 3.01	2.4 Piecewise defined functions
Factor: (a) $x^2 - x - 6$ (b) $x^2 - 4$ (c) $x^2 + 3x + 2$	<b>9.1</b> <b>9.7</b>	(a) $(x + 2)(x - 3)$ (b) $(x - 2)(x + 2)$ (c) $(x + 1)(x + 2)$	0.6 Factoring
Write as a power: (a) $\sqrt{t}$ (b) $\frac{1}{x}$ (c) $\frac{1}{\sqrt[3]{x^2 + 1}}$	<b>9.4–9.8</b>	(a) $t^{1/2}$ (b) $x^{-1}$ (c) $(x^2 + 1)^{-1/3}$	0.3, 0.4 Exponents and radicals
Simplify: (a) $\frac{4(x + h)^2 - 4x^2}{h}$ , if $h \neq 0$ (b) $(2x^3 + 3x + 1)(2x) + (x^2 + 4)(6x^2 + 3)$ (c) $\frac{x(3x^2) - x^3(1)}{x^2}$ , if $x \neq 0$	<b>9.3</b> <b>9.5</b> <b>9.7</b>	(a) $8x + 4h$ (b) $10x^4 + 33x^2 + 2x + 12$ (c) $2x$	0.5 Simplifying algebraic expressions
Simplify: (a) $\frac{x^2 - x - 6}{x + 2}$ if $x \neq -2$ (b) $\frac{x^2 - 4}{x - 2}$ if $x \neq 2$	<b>9.1</b> <b>9.7</b>	(a) $x - 3$ (b) $x + 2$	0.7 Simplifying fractions
If $f(x) = 3x^2 + 2x$ , find $\frac{f(x + h) - f(x)}{h}$ , if $h \neq 0$	<b>9.3</b>	$6x + 3h + 2$	1.2 Function notation
Find the slope of the line passing through (1, 2) and (2, 4).	<b>9.3</b>	2	1.3 Slopes
Write the equation of the line passing through (1, 5) with slope 8.	<b>9.3</b> <b>9.4</b> <b>9.6</b>	$y = 8x - 3$	1.3 Point-slope equation of a line